

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 9, 10 and 12-16.

1. (Original) A method of diagnosing skin cancer in a patient comprising: providing a tissue sample from a patient suspected of having skin cancer; and determining whether cells in said tissue sample express MrgX2, wherein expression of MrgX2 indicates that the patient has skin cancer.

2. (Original) The method of Claim 1, wherein the skin cancer is melanoma.

3. (Original) The method of Claim 1, wherein the tissue sample comprises skin cells.

4. (Original) The method of Claim 1, wherein MrgX2 expression is determined by contacting the tissue sample with an antibody that specifically binds MrgX2 and determining if the antibody binds to the tissue sample.

5. (Previously presented) The method of Claim 4, wherein the antibody is a monoclonal antibody.

6. (Original) The method of Claim 4, wherein the antibody is detectably labeled.

7. (Original) The method of Claim 6, wherein the antibody is labeled with a radioactive label.

8. (Original) The method of Claim 6, wherein the antibody is labeled with a fluorescent label.

9. (Canceled)

10. (Canceled)

11. (Original) The method of Claim 1, wherein said MrgX2 has the amino acid sequence of SEQ ID NO: 4

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Original) A method of diagnosing melanoma in a patient comprising:
obtaining a tissue sample from the patient;
isolating protein from the tissue sample;
contacting the protein with an antibody to MrgX2; and
determining binding of the antibody to the protein, wherein specific binding of said
antibody to the protein is indicative of melanoma.
18. (Original) The method of Claim 17, wherein the antibody is a monoclonal
antibody.
19. (Original) The method of Claim 17, wherein the antibody is detectably
labeled.
20. (Original) The method of Claim 17, wherein the isolated protein is separated
by size prior to being contacted with the antibody to MrgX2.
21. (Original) The method of Claim 17, wherein the isolated protein is
immobilized on a membrane prior to being contacted with the antibody to MrgX2.
22. (Original) The method of Claim 17, wherein the tissue sample comprises skin
cells.